



**IN THE UNITED STATES DEPARTMENT OF COMMERCE  
PATENT & TRADEMARK OFFICE**

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<b>APPLICANT :</b>	Clark, Robert E.	)	
		)	
<b>SERIAL NO. :</b>	10/769,483	)	<b>EXAMINER:</b>
		)	Melanie J. Hand
<b>FILED :</b>	January 30, 2004	)	<b>GROUP ART UNIT:</b>
		)	3761
<b>FOR :</b>	Hemo-Aide	)	

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**SECTION 1.131 AFFIDAVIT OF ROBERT E. CLARK**

I, ROBERT E. CLARK, being duly sworn, does hereby depose and state as follows:

1. I am the Applicant of the patent application identified above and the inventor of the subject matter described and claimed therein.
2. At least as early as July 18, 2000, I had completed certain teachings for an ultra violet blood irradiation apparatus in this country as evidenced by the following. Prior to July 18, 2000, having earlier conceived of the ultra violet blood irradiation apparatus, I prepared an Invention Disclosure Data Sheet that describes and details how this apparatus is to work and/or be performed and I prepared detailed drawings that depict the components which are to be used in this apparatus. A true and accurate copy of this Invention Disclosure Data Sheet and drawings, with portions redacted, are attached hereto as Exhibit "A".
3. My teachings of this ultra violet blood irradiation apparatus were subsequently described in U.S. Provisional Patent Application, Serial Number 60/312,412, filed August 15, 2001; and described and claimed in U.S. Non-Provisional Patent Application, Serial Number 10/219,656,

filed April 13, 2004, issued as U.S. Patent 6,719,716; and described and claimed in-part of U.S. Continuation-In-Part Patent Application, Serial Number 10/769,483, filed January 30, 2004.

4. I make this affidavit upon my own personal knowledge and I am otherwise competent and qualified to testify concerning the matters stated herein.

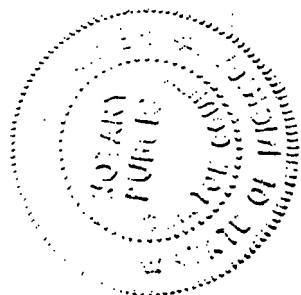
Dated: 4/19/07

By:   
Robert E. Clark

SUBSCRIBED AND SWORN TO ME THIS  
19 day of April, 2007.

Jacqueline Walter  
Notary Public

JACQUELINE WALTER  
NOTARY PUBLIC - STATE OF MICHIGAN  
COUNTY OF CLINTON  
MY COMMISSION EXPIRES 11/18/2007  
Acting in the County of Ingham



**EXHIBIT “A”**

Gallagher/Duby, PL

### INVENTION DISCLOSURE DATA SHEET

Please complete this form for patent consideration. Use additional sheets if necessary.

1. The working title of the invention is: HEMO-AIDE

\_\_\_\_\_

2. The technical field of the invention is (be as specific as possible): Ultra violet blood irradiation

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. The inventor(s) is/are: Bob Clark

\_\_\_\_\_

\_\_\_\_\_

4. What problem were you trying to solve: Eradication of viruses and bacteria in the body without contamination, portability and safety.

\_\_\_\_\_

\_\_\_\_\_

2510 KERRY STREET  
SUITE 214  
LANSING, MI 48911  
S17/371-4200

5. How have others tried to solve this problem in the past: By using a machine which used a mercury vapor lamp and an irradiation chamber which was permanent to the machine and was hard to sterilize and time consuming.

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6. How has the prior solution failed to completely solve this problem:

The unit was made with contaminating materials "Mercury vapor lamp" which is not allowed today by FDA. The old irradiation chamber would be contaminating with today's diseases.

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7. Describe your solution in 25 words or less: This new machine is more effective by using a pure UV light that is calibrated to the right frequencies needed. We use a disposable cuvette for the treatment of fluid exposed to UV light which can be disposed of thus eliminating all chances of any kind of contamination.

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- 8.-Q Depict your solution using at least 1 drawing (Attach copy(ies)). FIG 5 & 6

Blood is withdrawn by venipuncture through an irradiation chamber called a Cuvette where it is exposed to a controlled amount of ultraviolet energy in the accepted therapeutic band. It continues on through a peristaltic pump. If this procedure is being used. If not, it will bypass pump to an IVAC bottle which has its own vacuum to draw blood at a controlled rate. The technique\* amount of 1.5cc of blood per pound of body weight (never exceeding 250cc) when said amount is withdrawn. The irradiated blood then returns to the patient through the irradiation chamber (Cuvette) again and through the same needle used for withdrawal. Average treatment takes one hour.

\* Knott technique

9. Referring to the drawing(s), describe how your solution works: \_\_\_\_\_

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10. Describe the functional and/or structural differences between your solution and a prior solution: Treatments more effective by using pure UV light other than Mercury vapor. Eliminates contamination completely by use of personal cuvettes. Unit is smaller and compact being more portable, the other being a floor unit.

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11. Why do you believe your solution would not have been obvious to another inventor working on the same problem at the same time: \_\_\_\_\_

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12. Describe all results achieved by your solution (what happened?). Start with the results achieved relative to solving your problem, but don't stop there; give all other results as well: Eliminated all chance of mercury contamination  
Use of pure UV light becomes more effective by being able to calibrate UV light in the range that is needed. Unit has become more portable thus treatment procedure is less time consuming.
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- 

13. Describe the advantages of your solution over the prior solution. (Compare your solution with the prior solution. As above, start with advantages relative to your problem. Then give all other advantages, also.): same
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14. The invention was first thought of on: \_\_\_\_\_

15. It was disclosed inside my company to: \_\_\_\_\_  
on: \_\_\_\_\_

16. It was first disclosed outside my company to: \_\_\_\_\_  
on: \_\_\_\_\_

17. The first drawings or sketches were made by: \_\_\_\_\_  
on: \_\_\_\_\_ (attach copies).
18. The first written description (other than drawings) was made by: \_\_\_\_\_  
on: \_\_\_\_\_  
(attach copy).
19. The invention was first tried out within my company by: \_\_\_\_\_  
on: \_\_\_\_\_  
at the following location: \_\_\_\_\_
19. The invention was first tried outside my company by: \_\_\_\_\_  
on: \_\_\_\_\_  
at the following location: \_\_\_\_\_
21. The invention was or will be first described in a publication on: \_\_\_\_\_  
The name of the publication is: \_\_\_\_\_
22. The invention was or will be first released for production on: \_\_\_\_\_
23. The invention was or will be offered for sale on: \_\_\_\_\_

24. Please list the names, addresses, and telephone numbers of all persons having first-hand knowledge of the facts surrounding the making of this invention:

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25. Please list all other reports or documents within which additional information about the invention can be found: \_\_\_\_\_

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26. Additional comments: \_\_\_\_\_

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27. Inventors:

Name: Bob Clark

Signature: Bob Clark

Dated: \_\_\_\_\_

Citizen of: USA

Residence Address: 2902 S. Cedar St. Lansing Mi. 48910

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Dated: \_\_\_\_\_

Citizen of: \_\_\_\_\_

Residence Address: \_\_\_\_\_  
\_\_\_\_\_

27. Company Information:

Company: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Number of Company employees: \_\_\_\_\_

Name and Title of Officer who will sign Application: \_\_\_\_\_  
\_\_\_\_\_

Dated: \_\_\_\_\_

### DETAILED DESCRIPTION

With reference to the perspective views of the Hemo-Aide<sup>®</sup> irradiation apparatus of the invention as shown in Fig. 1, 2 and 3, the blood irradiation apparatus 10 which is comprised of cabinet 11, and cover 12: Cabinet 11 and cover 12 are made from metal similar to that used for storage cabinets. The cover encloses pump 18 and irradiation station 13. Top front of cabinet also displays 14 timer which provides amount of time and treatment has been given and power control switches comprising of 15 On/Off main power switch, On/Off pump control switch 16 and On/Off UV light control switch 17 thereby providing separate power control to the irradiation device 10 itself as well as separate power control of the pump 18 and UV light source 25 as in Fig. 4.

The cover 12 in Fig. 1 contains 2 apertures 22 which provides egress for the conduit transporting the blood to and from the patient.

A cover plate 12 (shown in Fig. 1) is removed in Fig. 2 to more clearly illustrate the pump and the irradiation station. The perspective view of the blood irradiation apparatus of Fig. 2 illustrates the relationship between the peristaltic pump 18 and the irradiation station 13. Blood from the patient is transported by a conduit through aperture 22 to a cuvette shown in Fig. 5 and 6 mounted in irradiation station 13 by brackets 27 and 28 thereby enabling the blood flowing through the cuvette to be irradiated by the UV light source.

**Blood from the cuvette is then transported by a conduit to the peristaltic pump 18 through aperture 22 to the glass container and returned to the patient.**

**With cover 12 in the open position as illustrated in Fig. 2, access is provided to the pump 18 and the irradiation station 13 for purposes of servicing these components; for example, to replace and position the cuvette in brackets 27 and 28 of the irradiation station 13.**

**The lower section 23 Fig. 4 of housing 11 provides space for mounting the electrical components of the blood irradiation apparatus 10 Fig. 9. The cross section view of Fig. 4 shows the manner in which the pump 18 and the irradiation station 13 including UV light source 25 are mounted in tubular housing 11.**

**UV light source 25 is removable retained at each end by respective holding elements 26A and 26B each of which is adjustable to calibrate respective socket 30.**

**Light box 24 Fig. 4 is self contained to separately be calibrated to different light transmission band widths.**

**For example, each of the UVA, UVB or UVC light band widths are inserted within holding elements 26A and 26B of irradiation station 13. Light box with open top is covered with quartz crystal glass 29 Fig. 4 to allow transmission of UV light source to cuvette. Electrical power is supplied to Hemo-Aide<sup>®</sup> Irradiation as shown in Fig. 9.**

**EMO-AIDE<sup>®</sup>** UVBI Jnit

Fig.1

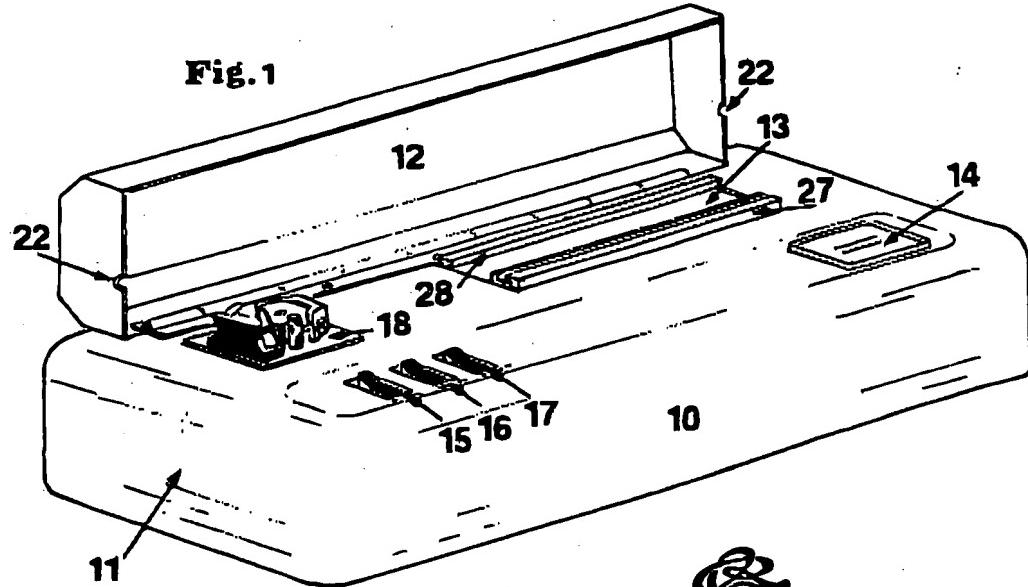
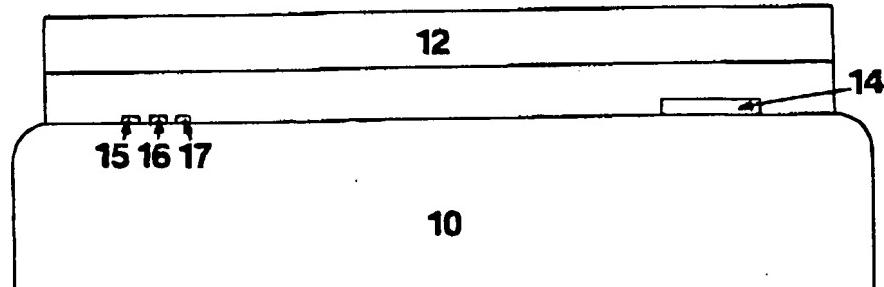
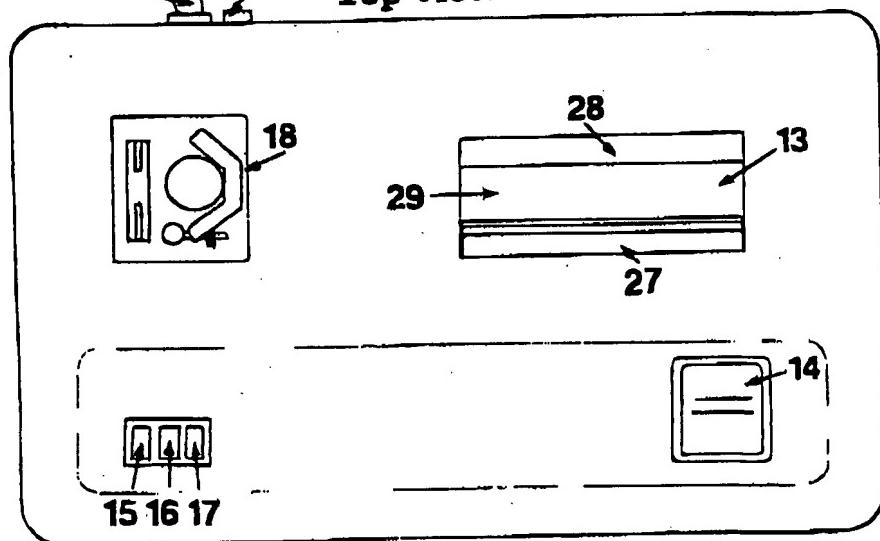


Fig. 2

Top view



Front view

Fig. 3

21

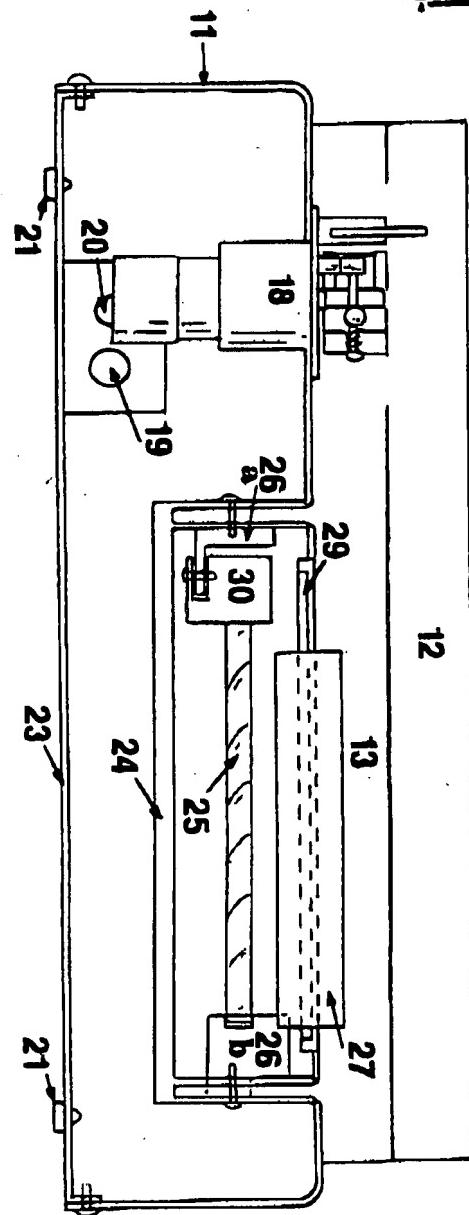
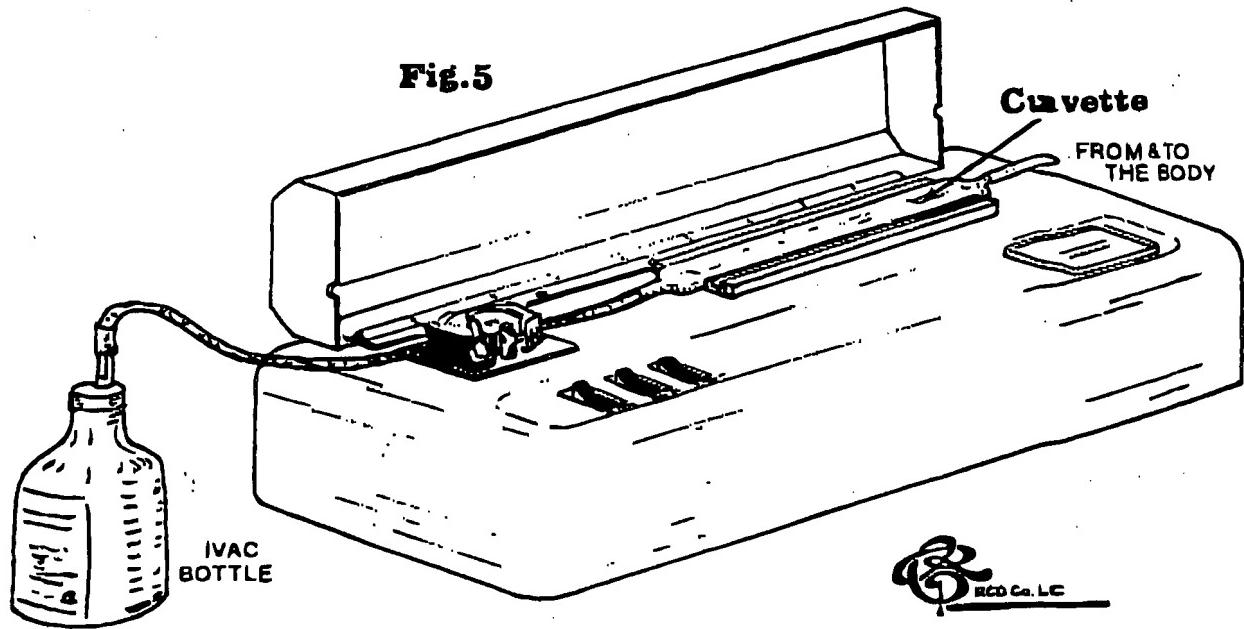
**H. MO-AIDE®** UVBI Unit

Fig.4

Fig.5

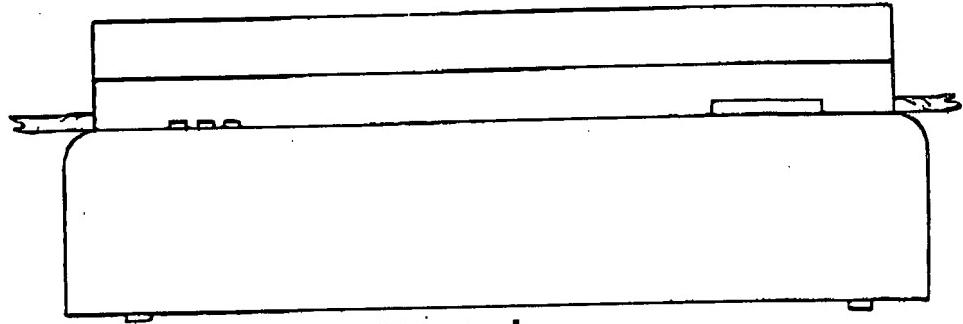
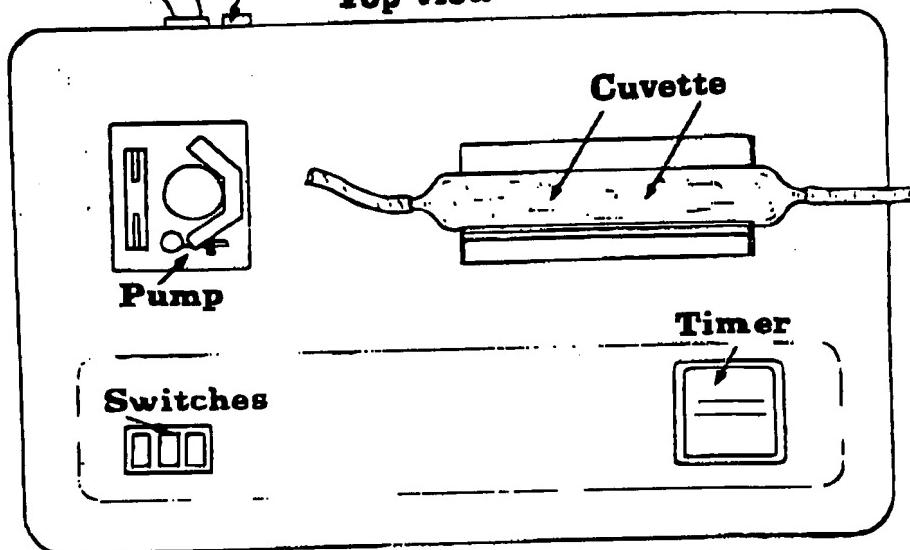


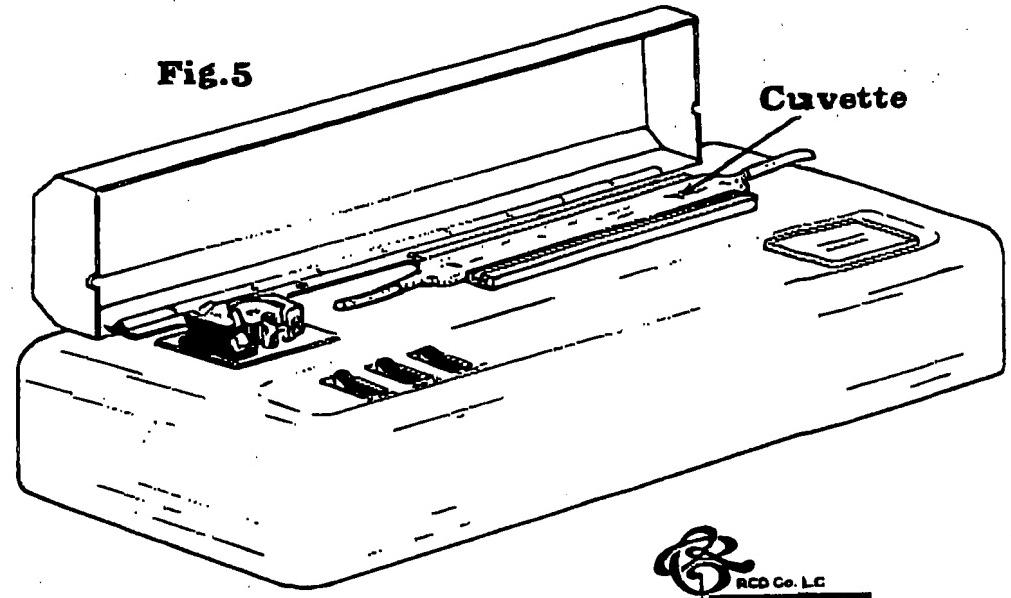
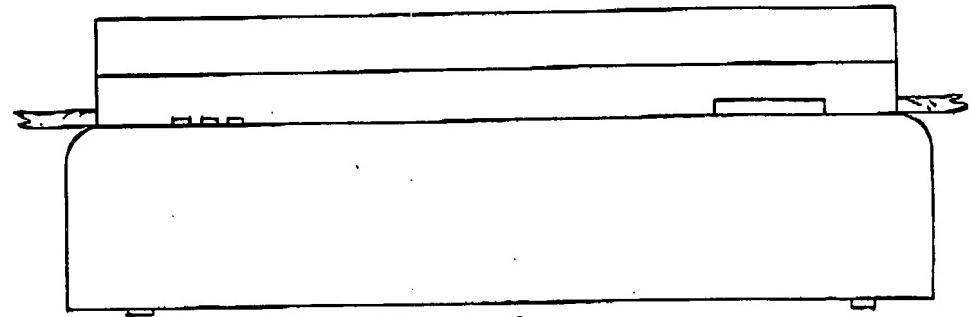
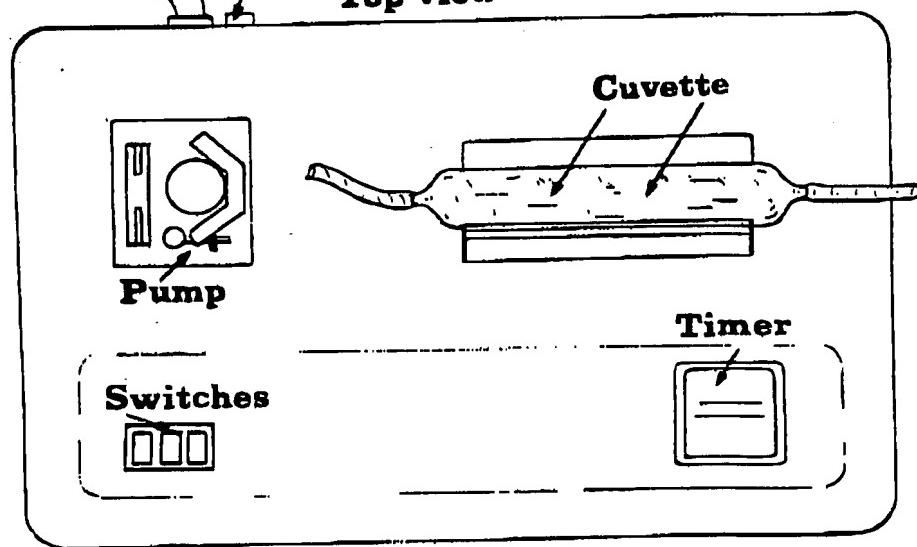
Power  
Cord

Fuse

Top view

Fig.6



**EMO-AIDE<sub>®</sub>** UVBI Unit**Fig.5****Cuvette****Power Cord**      **Fuse**  
**Top view****Fig.6****Front view**

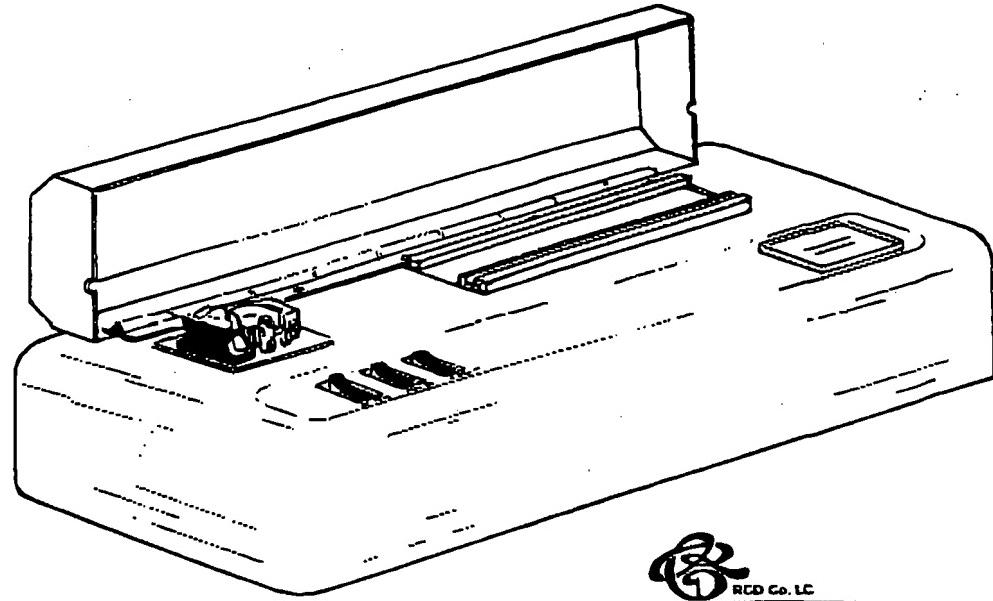
**HI MO-AIDE<sub>®</sub>** UVBI Ur

Fig. 7

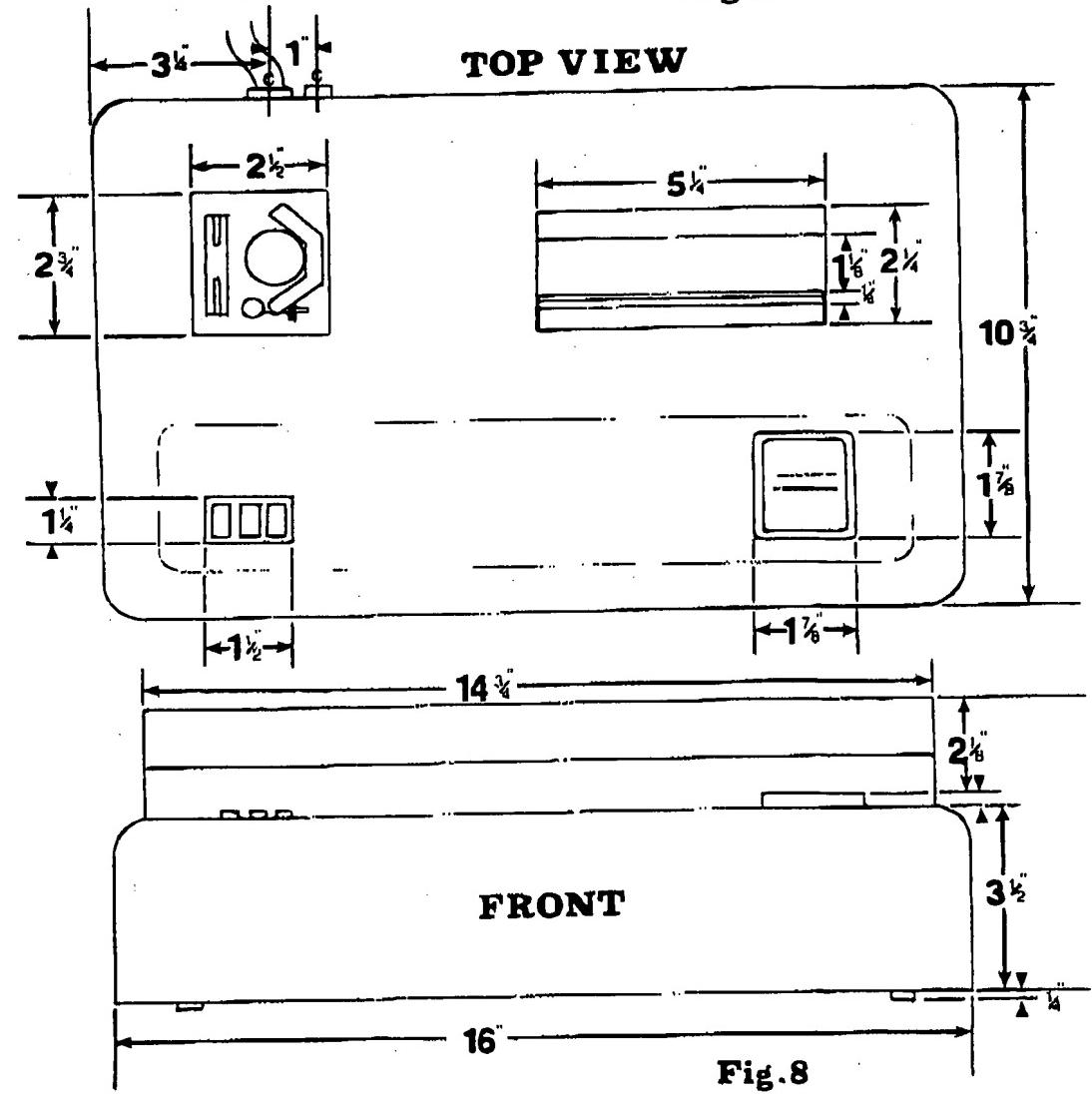


Fig. 8

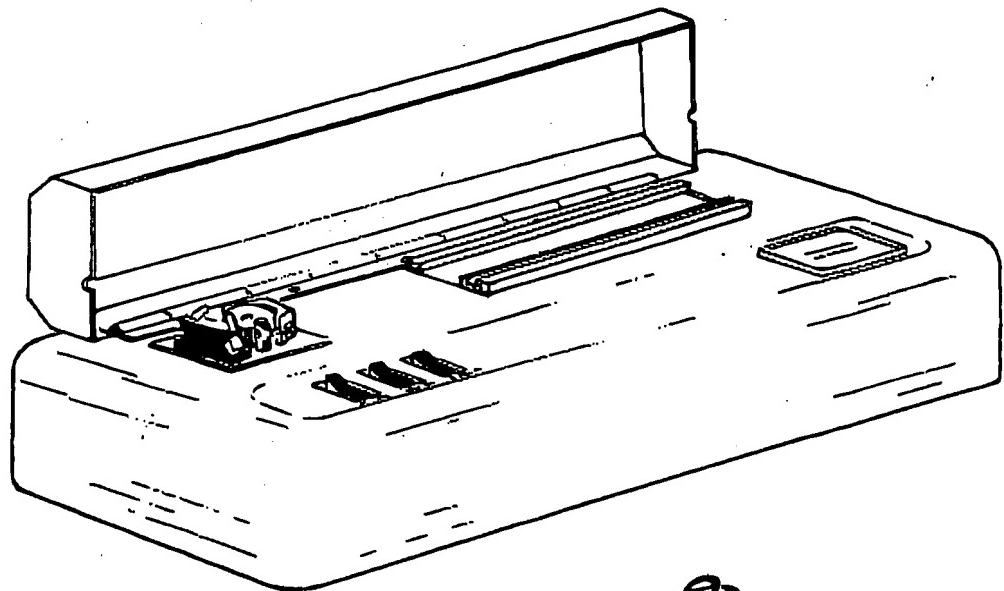
  
RCD Co. LC

Fig. 9 Wire diagram

